TABLE 1. Hemodynamic and echocardiographic parameters before and after doxorubicin chemotherapy with (group 2) or without (group 1) PLV

	Before	After	6 wk later
LVEDV (mL)			
Group 1	55.7 ± 12.2	65.5 ± 5.7	67.3 ± 5.6
Group 2	54.6 ± 5.0	66.4 ± 4.6	60.2 ± 4.5
LVESV (mL)			
Group 1	22.0 ± 6.7	40.6 ± 8.2	46.6 ± 5.3*
Group 2	23.0 ± 2.7	41.5 ± 6.9	34.3 ± 4.9*
Cardiac output (L/min)			
Group 1	4.0 ± 0.3	3.3 ± 0.1	3.0 ± 0.2*
Group 2	3.9 ± 0.3	3.1 ± 0.2	3.3 ± 0.1*
Ejection fraction (%)			
Group 1	61.1 ± 5.1	37.7 ± 5.7	30.5 ± 5.8
Group 2	57.7 ± 9.0	37.2 ± 12.2	42.6 ± 10.5
Oxygen delivery (mL/min)			
Group 1	1130 ± 170	790 ± 65	728 ± 111
Group 2	1153 ± 155	765 ± 53	820 ± 95
Oxygen extraction			
Group 1	0.12 ± 0.01	0.24 ± 0.01	0.32 ± 0.01*
Group 2	0.13 ± 0.01	0.26 ± 0.01	0.26 ± 0.01*

LVEDV, Left ventricular end-diastolic volume; *LVESV,* left ventricular end-systolic volume.
*$P < .05$.

tation. Well-known drive line or device pocket infections, as well as mechanical failures (also described by Casarotto and colleagues[1]), are not possible with PLV. Anticoagulation treatment is avoided, reducing the risk of bleeding complications. Thromboembolic events caused by clot formation within the LVAD are also avoided. Furthermore, PLV is much less invasive than LVAD implantation, and quality of life is enhanced by avoiding a transcutaneous drive line and dependence on a mechanical device. Regarding the economic aspect, costs for PLV are much lower than for LVAD implantation, and PLV can be performed in many more hospitals than can LVAD implantation, which is restricted to specialized centers.

I congratulate Casarotto and colleagues[1] on their successful management of this difficult case. However, I encourage cardiac surgeons to take alternative treatment options such as PLV into consideration in such challenging cases.

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Aortic insufficiency in patients with Marfan syndrome: A surgical dilemma

To the Editor:

The excellent article by de Oliveira and colleagues[1] and the related editorial by Miller[2] are vital reading for all those involved in the management of patients with Marfan syndrome (MFS). In their article, de Oliveira and colleagues[1] reported the results of surgery for aortic root aneurysm in patients with MFS. Sixty-one of these patients underwent aortic valve–sparing operations, with reimplantation of the aortic valve in 39 patients and remodeling of the aortic root in 22. Patient age ranged between 12 and 59 years. Freedom from reoperation at 10 years was 100%, but only 2 patients had a full 10-year follow-up. Twenty-one percent of patients required reexploration for bleeding (only 3% in the reimplantation group). Perhaps the most significant finding was that 25% of patients had more than 2+ aortic insufficiency during the follow-up period. Thus if aortic insufficiency continues to progress through a longer follow-up period, reoperation will be necessary in a significant number of patients.

Histologic evaluation of the leaflets of the aortic valve has demonstrated four different layers. The subendocardial ventricular layer is composed of elastic fibers oriented in various directions.[3] The noncoaptational parts of the aortic leaflets are composed of an elastic grid reinforced with collagen fibers and bundles. The remaining layers have irregular amounts of arbitrarily oriented elastic fibers and collagen fibers.[3] MFS is caused in part by mutations within the gene for fibrillin 1, which is the main protein of the microfibril network. Microfibrils play a crucial role in the trophicity and function of elastic tissue.[4] In MFS, these mutations lead to the formation of thoracic aortic aneurysms[5] and appear to be related to proteolytic degradation.[6] If the progression of aortic insufficiency in de Oliveira and colleagues' series[1] is due to causes inherent in the surgical technique, this problem could probably by prevented by modifications in the surgical technique. David has already modified this technique several times,[2] and all these modifications are included in the cases in this study. If aortic insufficiency is due to a structural deficiency of the native aortic leaflets, however, then all patients are at a potentially high risk for reoperation.

Kon and associates[7] have recently reported the results of root replacement with the Freestyle bioprosthesis (Medtronic, Inc, Minneapolis, Minn) in 104 consecutive patients with multiple etiologies of aortic valve disease who took part in the worldwide study for submission to the Food and Drug Administration for premarket approval of this valve. Patient age ranged from 48 to 87 years. Freedom from reoperation was 100% at 8 years, with no structural valve deterioration. More signifi-

cantly, only 2% had mild aortic insufficiency. Comparison of these two series is difficult because of the differences in population and etiology, but in the absence of prospective or randomized studies, we must base our decisions on extrapolation from current data. Thus there is no conclusive evidence that valve-sparing operations for patients with MFS have an advantage relative to Freestyle root replacement. Antimineralization treatment and zero-pressure fixation[8] make this valve more attractive for implantation than a homograft because of the lower rate of calcification with no significant changes in the elastic properties of the elastic wall,[8,9] and reoperation if needed is simpler with the Freestyle bioprosthesis because of lessened inflammatory reaction in the host tissues. A Freestyle root replacement with graft extension could be a reasonable operation for patients with MFS for whom anticoagulation is contraindicated or not acceptable. Further long term data are needed, however, before any of these operations can be recommended with certainty.

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Amiodarone for postoperative atrial fibrillation

To the Editor:

We read with interest the article by Yagdi and colleagues[1] dealing with the use of amiodarone to prevent of postoperative atrial fibrillation (AF). In this prospective, randomized study, 77 patients (amiodarone group) received intravenous amiodarone during the first 48 hours after the operation followed by declining oral dosing over a 30-day period, and 80 patients (control group) received placebo. The authors observed a statistically significant reduction in the incidence of AF (10% in amiodarone group vs 25% in control group) as well as a significant reduction in the mean duration of AF (12.8 ± 4.8 hours in amiodarone group vs 34.7 ± 28.7 hours in control group).

We recently reported similar results in a prospective, randomized study conducted with 200 consecutive patients undergoing CABG.[2] The treatment group received oral amiodarone 4 hours after arrival to the intensive care unit and until hospital discharge. The incidence of AF was reduced from 25% to 12%, and its duration was also reduced.

These two prospective randomized trials constitute additional evidence for the efficacy of amiodarone in the prevention of AF after CABG. Interestingly, although in our series only the oral form of amiodarone was used, the results observed were almost identical to those reported by Yagdi and colleagues,[1] suggesting that the intravenous administration of amiodarone may not offer additional beneficial effects in preventing postoperative AF. If these observations were to be confirmed in future studies, the problem of the cost-effectiveness of the use of amiodarone in this setting, as alluded to in the editorial by Saltman,[3] would be completely resolved.

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Reply to the Editor:

There is no consensus about the optimal dose and route of amiodarone in prophylaxis against atrial fibrillation after coronary artery bypass grafting. In most of the studies we cited in our article,[1] intravenous amiodarone doses ranged from 10 mg/(kg · d) to 20 mg/(kg · d) through 2 to 8 days. Oral amiodarone doses ranged from 2.8 to 7.0 g through 7 to 20 days. We used relatively short-term, low-dose (10 mg/[kg · d], for 48 hours) intravenous administration, followed by oral tapered doses at a total of 9.0 g through 30 days. We prefer a combination therapy to take the advantage of accelerated loading time with the intravenous amiodarone and to obtain the incremental benefits of the oral amiodarone during the short-term intravenous administration.

We found that the postoperative administration of amiodarone was effective at significantly reducing the incidence of postoperative atrial fibrillation by 14.6%, the duration of atrial fibrillation episodes by 21.9 hours, and the ventricular response rate by 20 beats/min. In addition to the lower incidence of postoperative atrial fibrillation, the amiodarone group had sig-